

Appl. No. 10/065,274
Response dated 2005-03-14**REMARKS**

By this amendment, claims 1, 3, 4, 7, 12, 15 – 16 and 18 – 19 have been amended, and claims 1 – 19 are pending in the application. Claims 3 and 12 – 15 stand rejected as indefinite under 35 U.S.C. 112 second paragraph; claims 1 – 6, 8 – 9, and 11 – 13 stand rejected as anticipated by *Gofman* et al. '520; claims 1 – 5, 7 – 9, and 11 – 13 stand rejected as anticipated by *Sharp* '167; claims 7 and 14 stand rejected as obvious in view of *Gofman* et al. '530; claims 16-19 were withdrawn from examination due to a restriction requirement; claim 10 was indicated as allowable, but objected to as depending from a rejected base claim; and, claim 15 was indicated as allowable if rewritten or amended to overcome the rejection under 35 U.S.C. 112. Further examination of the application as amended and reconsideration of the rejections and objections are respectfully requested.

Claim Amendments

Claim 1 has been amended to indicate that the passive circuit element is coupled to the circuitry via the handpiece connector; support for this amendment can be found inter alia in the specification at paragraphs [0042] to [0047] and Figs. 4B and 4C. Claims 3, 12, and 15 have been amended to more clearly define applicant's invention; support for these amendments can be found in original claims 3, 12, and 15, and additional support for the amendment to claim 15 can be found inter alia in the specification at paragraphs [0012] and [0063] and Fig. 6B. Claims 1, 3, and 4 have been amended to indicate that the handpiece coupling or footswitch coupling are removable; support for these amendments can be found inter alia in the specification at paragraphs [0031], [0049] and [0065]. Claim 7 has been amended to indicate that the passive circuit element can be located in the generator and adjusts the frequency of the base resonance signal when coupled to

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the generator circuitry by the handpiece connector; support for this amendment can be found inter alia in the specification at paragraph [0044] and in Fig. 4C. No new matter is introduced by these amendments.

Restriction Requirement

The office action made the restriction requirement on the application final as drawn to two distinct inventions: (I) claims 1 – 15 as drawn to an ultrasonic scaler and footswitch; and (II) claims 16 – 19 as drawn to a business method and inventory. Applicant hereby confirms the election of the claims to invention I, with traverse.

Applicant respectfully requests reconsideration of the restriction requirement in view of the amended claims and/or rejoinder. The amended claims contain each feature of the apparatus as claimed in claim 1, thus the claims are not directed to independent and distinct inventions, and do not require an additional search. The claims are related as an apparatus (claims 1-15) and a method of using/inventory of the apparatus of claim 6 (claims 16-19).

The office action asserts that the inventions are distinct under MPEP 806.05 if it can be shown that the process as claimed can be practiced by another materially different apparatus. The examiner asserts in this case that the product as claimed can be used in “a materially different process, such as door-to-door direct sales with no ordering or shipping required.”

Applicant notes that the burden is on the examiner to provide reasonable examples that recite material differences, and that if applicant proves or provides convincing argument that there is no material difference, the proof is again on the examiner to document another materially different process or apparatus or withdraw the requirement. MPEP 806.05(e). It is noted that claim 19 is an inventory comprising the invention of claim 1, the features of claim 1 all being affirmatively

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recited in claim 19, as amended. As such, claim 19 at least is not shown to be distinct or to impose any additional burden on the examiner.

Applicant reserves the right to petition to have the process claims rejoined. Rejoinder of method claims with allowed, originally examined claims is appropriate. According to MPEP §821.04, "If applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims which depend from or otherwise include all the limitations of the allowable product claim will be rejoined." See *In re Kase*, 71 USPQ2d 1063 (Dir. USPTO 2004). In the present case, amended claims 16 and 19 affirmatively recite each of the features of apparatus claim 1. All of the features of the apparatus recited in claim 1 are incorporated in base process claim 16 and inventory claim 19, and by dependence thereto of claims 17-18. In this sense, claims 16 and 19 are linking claims, indicating that there is only one invention here to be examined.

§ 112 Rejections

Claim 3 has been amended to indicate that the claim is directed to the combination of the footswitch connector and the footswitch. Claim 12 has been amended to indicate that the claim is directed to the combination of the dental scaler and the footswitch. Claim 15 has been amended to indicate that the claim is directed to the combination of the footswitch, ultrasonic scaler, and the two potentiometers.

Applicant believes that the claims, as amended, clearly claim the invention, and withdrawal of the rejections under 35 U.S.C. 112 is respectfully requested.

§ 102 Rejections under *Gofman* and *Sharp*

By way of background, applicant's invention is an ultrasonic dental scaler which automatically supplies a frequency to match a handpiece connecting thereto. A handpiece connector includes one or more passive circuit elements, which affect the resonant frequency produced by the generator. Multiple handpieces, each

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operating at a different resonant frequency with corresponding passive circuit elements, may thus be used with the same ultrasonic generator. The ultrasonic dental scaler also supports two footswitches. One footswitch includes a foot-controlled power level adjuster. When connected, the footswitch automatically disables the manual power adjuster. Another on-off footswitch includes no power adjustment mechanism. When connected, the manual power adjustment feature of the generator is maintained.

Gofman discloses an ultrasonic scaler with adaptive amplitude. An oscillator of the drive circuit is coupled to the coil for applying an oscillatory current to the coil. The circuitry relies on the inductance introduced via the magnetostrictive unit to the coil for establishing the value of oscillation frequency commanded by the probe, where the oscillation frequency is determined by a feedback path. Handle coil L1 extracts power from oscillator 12 during operation of oscillator 12. A feedback path, consisting of capacitor C1 and transistors Q1 and Q2, is provided to induce oscillation within the oscillator 12. The Darlington pair of transistors Q1 and Q2 amplifies the feedback and enlarges the frequency range of oscillation. See *Gofman* column 2, line 65 to column 3, line 10. The inductance of the handle coil L1 and probe 38 is dependent, in part, on the amount of the magnetostrictive material present in the magnetostrictive element 42. Upon interchange of one probe 38 for another probe 38, there is a change in the amount of the magnetostrictive material with a corresponding shift in the oscillation frequency of the oscillator 12. See *Gofman* at column 3, lines 25 – 35. Capacitors C1 and C2 and the inductance of coil L1 in combination with coil L3 operate to establish the frequency of oscillation. See *Gofman* at column 3, lines 43 – 48.

Sharp discloses an ultrasonic dental scaler which includes a selectively tunable oscillator circuit coupled to the handpiece energizer coil. The oscillator circuit generates a control signal having an oscillation frequency associated

therewith for vibrating the dental scaler insert in response thereto. In the manual tuning mode, the oscillator circuit includes a voltage controlled oscillator. In the automatic tuning mode, a second coil, a phase comparator, located in the handpiece, picks up a signal from the vibrating magnetostrictive insert. The signal is conditioned by transistor Q1 and coupled to the phase comparator. A second input of the phase comparator is connected to the output of the voltage-controlled oscillator. The output of the phase comparator is fed to the loop filter, producing an output which is a voltage which varies proportionally to the phase difference between the driving signal to the operative handpiece and the return signal from the second coil. This driving signal controls the input of the voltage-controlled oscillator by the connection of switch S3. By correct scaling and phasing of the signals, the phase-locked loop acts to adjust the drive frequency to the resonant frequency of the dental scaler insert positioned within the handpiece. (Column 8, line 39 to column 9, line 5.)

Gofman and *Sharp* disclose neither a dental generator with “a base resonance signal” that could be adjusted by using a passive element introduced via the handpiece connector as required in claim 1, nor “a passive circuit element coupled to the circuitry via the handpiece connector to adjust a frequency of the base resonance signal to a second frequency matching a resonant frequency of the handpiece” as required in claim 1. *Gofman* and *Sharp* each disclose an active feedback circuit in the generator unit, and thus teach squarely away from the passive element required in the handpiece connector of claim 1.

Applicant's circuits and those disclosed in *Gofman* and *Sharp* each contain capacitors, induction coils, etc. However, the passive circuit element in applicant's invention is operational only when coupled to the circuitry via the handpiece connector, as disclosed in paragraphs [0042] to [0044] and illustrated in Figs. 4B

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and 4C. Neither *Gofman* nor *Sharp* provides for a passive circuit element which is operational only when coupled to the circuitry via the handpiece connector.

§ 103 Rejection under *Gofman*

Claims 7 and 14 were rejected as obvious in view of *Gofman*. *Gofman* allegedly discloses the claimed invention except for the capacitor being in the handpiece connector instead of the generator unit (claim 7) and the potentiometer being in the generator unit instead of the footswitch (claim 14). The examiner asserts that rearranging parts of an invention involves only routine skill in the art.

Applicant does not merely rearrange parts, as discussed above. Additionally, placing capacitors in the handpiece connectors has the previously unknown result that different handpieces operating at different resonant frequencies can now be interchangeably used with the same generator without internal modal adjustment of the base frequency via the generator controls, switches or transistors, as is required in *Gofman*. Similarly, the footswitch achieves the previously unknown result that on-off and power level control footswitches can be used interchangeably and with the same ultrasonic generator automatically without adjusting any generator controls or switches.

For the reasons set forth above, it is respectfully submitted that *Gofman et al.* and *Sharp*, alone or in combination, do not anticipate, teach, suggest or render the claimed invention of the present application obvious. Therefore, withdrawal of the claim rejections under 35 U.S.C. 102(b) and 103(a) over these references is respectfully requested.

During the course of these remarks, Applicant has at times referred to particular limitations of the claims which are not shown in the applied prior art. This short-hand approach to discussing the claims should not be construed to mean that the other claimed limitations are not part of the claimed invention. Consequently, when interpreting the claims, each of the claims should be construed

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as a whole, and patentability determined in light of this required claim construction. Unless Applicant has specifically stated that an amendment was made to distinguish the prior art, it was the intent of the amendment to further clarify and better define the claimed invention.

If the Examiner has any questions or comments regarding this communication, he is invited to contact the undersigned directly to expedite the resolution of this application. Further examination of the application and reconsideration of the claims as originally presented and the allowance thereof is respectfully requested.

Respectfully submitted,



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